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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/628,726 | 07/28/2000 | TORU ITOH | 106879 | 3339 |

25944 7590 08/22/2002

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EXAMINER

CHANG, VICTOR S

ART UNIT PAPER NUMBER

1771

DATE MAILED: 08/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|--|--------------------------------------|------------------------------------|--|
| <p align="center">Office Action Summary</p> | Application No. 09/628,726 | Applicant(s) ITOH ET AL. | |
| | Examiner Victor S Chang | Art Unit 1771 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 2-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s) ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>6</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claim 1, drawn to a sandwich structure comprising a core of closed-cell foam core, classified in class 428, subclass 304.4.
 - II. Claims 2-5, drawn to sandwich structures comprising a core of closed-cell core and honeycomb, classified in class 428, subclass 304.4.
 - III. Claims 6-11, drawn to sandwich structure repairing methods, classified in class 156, subclass 60+.

The inventions are distinct, each from the other because:

2. Inventions Group I and Group II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, the different inventions, Group II has a core comprising honeycomb structure as reinforcing element.
3. Inventions Group III and Group I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product can be repaired by delaminating the layers, and replace the damaged components.

Art Unit: 1771

4. Inventions Group III and Group II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product can be repaired by delaminating the layers, and replace the damaged components.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Jerry Phielman on 6/17/02 a provisional election was made with traverse to prosecute the invention of Group I, claim 1.

Affirmation of this election must be made by applicant in replying to this Office action.

Claims 2-11 are withdrawn from further consideration by the examiner, 37

CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scoles et al. (US 5916469) either individually, or in view of Grimm et al. (US 5481091).

Scoles invention is related to a reinforced thermoplastic composite (column 1, lines 9-10). Scoles teaches that it is known that composite sandwich structures having resin matrix skins or face sheets adhered to a honeycomb or foam core are used in aerospace, automotive, and marine applications for primary and secondary structure. The face sheets typically are reinforced organic matrix resin composites made from fiberglass, carbon, ceramic, or graphite fibers reinforcing a thermosetting or thermoplastic matrix resin (column 9, lines 21-30). Further, Scoles teaches that it is known that adhesive is used to bond the face sheets to the foam. Efforts to strengthen the bond have generally focused on improving the adhesive, but those efforts have had limited success (column 9, lines 35-40). Therefore, Scoles teaches that in addition to the use a layer of adhesive to attach adjoining layers (column 21, lines 51-52), a plurality of Z-pins spanning the foam between the face sheets is also used to improve the integrity of the laminate (column 10, lines 23-26). It is noted that Scoles lacks a specific teaching that the reinforcing fibers is of hydrophobic type, however, it is believed that selecting a hydrophilic fiber is within the ordinary skill of the art of laminated composite, motivated by the desire to reduce the moisture absorption of the composite laminate. Regarding the limitation of the instant claimed invention that the adhesive films do not contain any carrier or a component resin of the fiber-reinforced surface plates, the Examiner takes Official notice the it is common to use an adhesive with a base polymer different from the resin used in the fiber reinforced composite layers. Alternatively, Grimm's invention is related to a process for bonding substrate and/or fusing surfaces together. In the "Background" section, Grimm teaches that

Art Unit: 1771

polymeric adhesives have been commonly used to bond various substrate surfaces together, and such materials often involve the use of monomers, catalysts, solvents and other components (column 1, lines 19-23). As such, it would have been obvious to one of ordinary skill in the art to select a suitable foam-free adhesive film, e.g., an adhesive with hydrophobic property, not limited to the same base resin as the fiber reinforced composite layer, to bond the foam members and layers together to form a laminate, motivated by the desire to reduce the diffusion of moisture across the adhesive layer.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S Chang whose telephone number is 703-605-4296. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

VSC
August 19, 2002

DANIEL ZIRKER
PRIMARY EXAMINER
GROUP 1900-
1700

Daniel Zinker